

Remarks

The various parts of the Office Action (and other matters, if any) are discussed below under appropriate headings.

Claim Status

Claim 13 has been amended to include the limitation of claim 15, and claims 14 and 15 have been cancelled. Accordingly, this application now contains claims 1-13 and 16.

Entry of the amendments is requested since in effect claim 15 has been replaced by amended claim 13 and claim 14 has been cancelled. These amendments do not introduce any new issue, but instead reduce the issues on appeal, it being noted that a notice of appeal is being filed concurrently herewith along with a request for pre-appeal brief review.

Oath/Declaration

The withdrawal of the objection to the declaration is noted with appreciation.

Claim Rejections - 35 U.S.C. § 101

First it is noted that the 35 U.S.C. § 101 rejection specific to claims 13 and 14 is now moot in view of the amendment to claim 13 and the cancellation of claim 14.

Regarding the balance of the rejection, the Examiner acknowledges the claimed subject matter is useful and concrete, but contends the claimed subject matter is not tangible. The Examiner, in particular, contends the claimed subject matter does not produce a real-world result. The Examiner suggests amending the claims to include a post-solution activity, but it is respectfully submitted that is not needed to make the claims statutory.

Claim 1 explicitly recites the step of combining the field sample values with the field size values to provide a score indicative of the field similarity of the first molecule to the second molecule. According to the Examiner, this is deficient since the claim lacks a tangible output of the claimed method. This, however, is not the case since the claimed method provides a score. The score is a tangible output of the method. Obviously, the score that is produced by the computer-implemented method will reside

in a computer buffer, if not stored on a storage medium. The produced score can be further acted upon, such as by being displayed on a monitor or printed on a printer.

In reply to the first Office Action, the Examiner's attention was directed to U.S. Patent No. 6,996,476, that issued on February 7, 2006 and was examined by John Brusca. Claim 1 of the '476 patent reads as follows:

1. A computer-implemented method for analyzing gene expression wherein the method comprises the steps of: (a) compiling data comprising a plurality of measured gene expression signals into a form suitable for computer-based analysis; and (b) analyzing the compiled data using iterative independent component analysis (ICA), wherein the analyzing comprises identifying an optimum number of independent clusters into which the data may be grouped.

In this claim a tangible result is the identification of an optimum number of independent clusters into which the data may be grouped. Nowhere does this claim recite any post-solution activity such as outputting the optimum number to a display.

The Examiner contends that the "fact patterns between the '476 patent and the instant claims are different and [not?] relevant to the analysis of the instant claim 1" but no explanation is provided as to how the fact patterns are different. To the contrary, both claims are directed to a computer-implemented method. The method of claim 1 of the '476 patent compiles data comprising a plurality of measured gene expression signals into a form suitable for computer-based analysis and then analyzes the data; whereas the method of instant claim 1 provides a set of field points representing field extrema of a first molecule, wherein each field point has a position and a field size value, and determines at the position of each of the field points of the first molecule the field of a second molecule to obtain a set of field sample values. Then, the method of claim 1 of the '476 patent analyzes the compiled data using iterative independent component analysis (ICA) to identify an optimum number of independent clusters into which the data may be grouped; whereas the method of instant claim 1 combines the field sample values with the field size values to provide a score indicative of the field similarity of the first molecule to the second molecule. If anything, the method of instant claim 1 is more statutory than claim 1 of the '476 patent since the latter method merely identifies an optimum number whereas the method of instant claim 1 provides a score.

For at least the foregoing reasons, withdrawal of the rejections under 35 U.S.C. § 101 is respectfully requested.

Claim Rejections - 35 U.S.C. § 102 and § 103

The rejection based on Ashworth have been maintained. Although the Office Action indicates the rejection was modified from the previous Office Action, the rejection appears to be the same at least with respect to claim 1. Accordingly, the previously submitted comments remain applicable.

The Examiner explains his position on page 6, lines 1 to 16 and page 8, line 3 to page 9, line 3. The Examiner's explanation is quite helpful in that he clearly sets out his reasoning. In particular, the Examiner on page 8, lines 5-8, states:

It would have been obvious to one of ordinary skill in the art, at the time the invention was made to modify Ashworth's method to determine the similarity score between sets of molecules by determining a second molecule's field points in relation to that of the first molecule. (emphasis added)

Such a modification may or may not have been obvious, but this is not the method specified in claim 1. The underlined portion of text above does not describe what is set forth in claim 1. According to the method of claim 1, the second molecule's field points need never be calculated. Instead, the field values of the second molecule are calculated at the locations of the field points of the first molecule. This difference gives rise to a significant advance over the Ashworth patent application and the other prior art, since it enables the advantages described in the detailed description on page 15, line 6 to page 16, line 4.

The Examiner continues on page 8, lines 8-12 to state:

One of ordinary skill in the art would have been motivated to [modify Ashworth's method], because, as suggested by Ashworth, one would expect changes in the field of a molecule relative to another molecule (page 4, lines 5-8). Hence, by determining a molecule's field points relative to another molecule, one would have a more accurate represent of the expected field.

The quoted part of the Ashworth patent application, however, merely explains the basic feature on which all field point methods are based, and has nothing to do with any

difference between Ashworth's field point method and the field point method of claim 1, which differ in their approach to calculating similarity scores.

In summary, Ashworth, and particularly the passages noted by the Examiner in the Office Action, neither disclose or even remotely suggest "determining at the position of each of the field points of the second set the field of the first molecule to obtain a further set of field sample value."

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

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